REMARKS

The present application was a divisional from an earlier-filed application and claims 2, 3, and 22 - 33 were originally presented for examination. Amendments were submitted to claim 2 in an earlier amendment making claim 2 an independent claim including the elements of former claim 1. Claim 3 depends from claim 2. As stated in an earlier response, claims 2 and 3 were not included in the original restriction requirement. The Official action now states that claims 2 and 3 are not readable on the elected invention. Assuming that claims 2 and 3 are to be withdrawn from consideration with the present elected invention, the Applicants respectfully request that the Examiner point out to which earlier identified Group of claims, claims 2 and 3 should belong. Also, please state whether the submitted amendments have been entered with respect to claim 2 so that the Applicants understand whether the amendments should be re-submitted when claims 2 and 3 are presented as part of a further divisional application.

Claims 23 and 26-33 were earlier withdrawn from consideration as being drawn to a non-elected invention. Claims 2 and 3 are presently being withdrawn. As a result, claims 22, 24, 25, and 34 - 37 remain in the application.

The Official Action states that claims 22, 24, 25 and 34 - 37 are rejected under 35 U.S.C. 102(e) as anticipated by US Pat. No. 5,818,842 to Burwell. Claim 22 of the present invention requires a frame converter "comprised only of hardware for bridging frames from a first frame format to a second frame format, said bridging without requiring processor intervention." In rejecting this claim based on Burwell, the Examiner references Figure 3 of the Burwell application and the device shown therein and referred to as "ridge 6". The Official Action states that the "ridges 6 carries out the bridging, and LAN emulation functions to permit transparent communication between any of the user

devices over the ATM network" and refers to language in the Burwell specification appearing at column 9, lines 25-41 and column 7, line 28 to column 8, line 37.

Nowhere in the language cited in the Official Action is it stated that the bridging functions are performed using "only hardware" as required by claim 22 of the present invention. Nor does the cited language require or teach that the bridging functions are performed "without requiring processor intervention", also as required by claim 22 of the present invention.

In fact, discussions in several parts of the Burwell specification clearly indicate that the bridging functions do involve processor intervention and non-hardware implementations. For example, the discussion at column 4, line 56 points out that the traffic forwarding is actually performed "by the route server 4" (see Figure 1) and "by the ridges using information that the route server conveys to them about the topology" (of the connected networks). This language makes it clear that the ridges are not even performing all of the bridging, as stated in the Official Action, and are utilizing the services of an external server. As stated at column 5, lines 51-53 of Burwell, the "route server is run on a SUN workstation with an ATM network interface card supporting both single and multiprocessor platforms." So, Burwell teaches utilizing an entire SUN workstation as a route server to help support traffic forwarding. This is a much more complicated and expensive solution than that offered by the present application.

Even more importantly, the discussion starting at column 10, line 24 of Burwell relates to Figure 6 and discusses the packet flow through the ridges in the ATM direction. As part of the traffic flow, it is stated that "Ethernet frames are buffered in their entirety inside the Quad MAC ASIC FIFO 46, then the QMAC 40 notifies the AXE RISC processor 48 via Reception Controller 47 that a DMA is

required." This "AXE RISC processor 48 is part of the ridge 6 and clearly involves "processor intervention" in the bridging process in stark contrast to the requirements of present claim 22.

The Burwell disclosure becomes even more precise with respect to the AXE RISC processor at column 10, lines 25-28, stating "AXE 48 is a 50 MHz R3000 RISC engine, with an integral high speed DMA and a separate, secondary processor bus." Thus, the solution offered by the cited art includes a high-powered, general purpose microprocessor, the very element claim 22 of the present invention requires to be absent.

The discussion in Burwell starting at column 11, line 8 covers traffic flow in the other direction and states that "Fig. 7, which shows data flow in the ATM-Ethernet direction" which "is similar to that described in Figure 6 except that transmit control processor 50 conducts QMAC Direct Memory Access..." The discussion goes on to state that "Transmit Controller 50 is functionally similar to the AXE 48" and that "like the AXE, the TXC is implemented with a 50 MHz R3000-based RISC processor..."

Applicants respectfully believe that the exemplary language cited above from the Burwell reference make it clear that Burwell does not teach or disclose that the bridging functions are performed using "a frame converter comprised only of hardware for bridging frames from a first frame format to a second frame format, said bridging without requiring processor intervention." In fact, Burwell is very specific about the types of processors needed to support the bridging and other disclosed functions. As such, Applicants request that the rejection of claim 22 as anticipated by Burwell be withdrawn and claim 22 allowed to issue as patentable over the prior art.

Following are some examples of language from the present specification supporting the restrictions in claim 22. At page 11, lines 22-24 describing one of the objects of the invention as "to convert formats between different layer 2 protocols using special purpose hardware without the aid of a microprocessor." On page 13, lines 21-25, "special purpose hardware means are provided to convert the arriving LAN frame having a switch header prefix." On page 19, lines 10-14, "present invention adds ATM ports and an efficient hardware format conversion and forwarding engine to the prior art LAN switch..." This special purpose hardware is depicted in Figure 4. The forwarding functions covered by claim 22 refer to the frames handled by hardware only, called 'bridged frames'. As discussed in the specification with respect to Figure 4 from page 21, line 1 through page 22, line 24, these bridged frames are processed using the hardware queues, elements 102 and 202. More details with respect to the handling of the two hardware queues is provided on page 25, line 16 to page 26, line 3 and on page 30, line 6 to page 31, line 17. The hardware logic involved in this processing does not require or use a microprocessor, but an ATM controller ASIC - or special-purpose integrated circuit. This solution provides the greater processing speed and throughput needed for modern network interconnections and is patentably distinct over the prior art.

The Official Action states that claims 34-35 are also rejected under 35 U.S.C. 102(e) because "the Ridge 6-fig.3 comprises a plurality of Ethernet LAN ports 20 and an ATM port 22." Claims 34-35 will not be discussed in further detail here since claims 34-35 depend directly from claim 22 and, as discussed in detail above, claim 22 is patentably distinct over the prior art. Claims 34 and 35 inherit the limitations of claim 22 and are thus also patentably distinct over the prior art and the Applicants respectfully request the withdrawal of the rejections of claims 22, 34 and 35 and early notice of allowance of the same.

The Official Action goes on to state that claim 24 "has similar limitations to claim 22" and "is rejected under Burwell for the same reasons set forth in the rejection of claim 22." For the same reasons as discussed above with respect to claim 22, the Applicants respectfully feel that claim 24 is also patentably distinct over the prior art. Claims 25, 36 and 37 each depend either directly or indirectly from claim 24 and thus inherit all of the limitations of claim 24. As such, Applicants feel that claims 24, 25, 26 and 37 are also in condition for allowance and respectfully request early notification of the same.

As discussed above, Applicants feel that the claims remaining in the present application, as amended, claims 22, 24, 25 and 34 - 37 stand in condition for allowance and respectfully request early notification of the same. If the Examiner feels that questions of patentability remain and that an interview would be helpful in resolving the remaining issues, the favor of a phone call to the Applicants' attorney at the number given below is requested.

PATENT
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Respectfully Submitted,

Scott W. Reid
Reg. No. 42,098

Customer No. 25299
IBM Corporation
Dept. 9CCA/002
PO Box 12195
Research Triangle Park, NC 27709-2195

Phone: (919) 254-1085
Fax: (919) 254-2649
email: swreid@us.ibm.com